



# ED<sup>TM</sup>-100

## OPERATING GUIDE

**WARNING**  
TO PREVENT ELECTRICAL SHOCK  
OR FIRE HAZARD, DO NOT EXPOSE  
THIS APPLIANCE TO RAIN OR MOIS-  
TURE. BEFORE USING THIS APPLIANCE,  
READ BACK COVER FOR FURTHER  
WARNINGS.



### GENERAL DESCRIPTION

The ED<sup>TM</sup> 100 is a self-contained amplification system which features inputs, equalization, and monitor capability specifically designed for use with electronic drums. The ED-100 will deliver 65 watts RMS into its heavy-duty 15" Scorpion® speaker. Peavey design engineers have also included a special constant-directivity horn for faithful reproduction of high frequency signals. To protect the speakers and to prevent clipping distortion, the ED-100 features Peavey's patented DDT<sup>TM</sup> compression circuitry.

Since the ED-100 has been designed specifically for use with electronic drum systems, it offers many features not found on other amplification systems. Independent monitor mixing, four-band active EQ, and complete effects patching capability allow the drummer to realize maximum potential from today's electronic drum systems.

The ED-100 is built to withstand the rigors of a night-after-night touring environment. The cabinet is constructed of 3/4" wood and is covered with the heaviest available 34 oz. Tolex®. Ruggedness is enhanced by the use of heavy steel corners and a steel-reinforced carrying handle. Internally, the ED-100 features chassis construction of heat treated aluminum alloy and utilizes the finest components available.

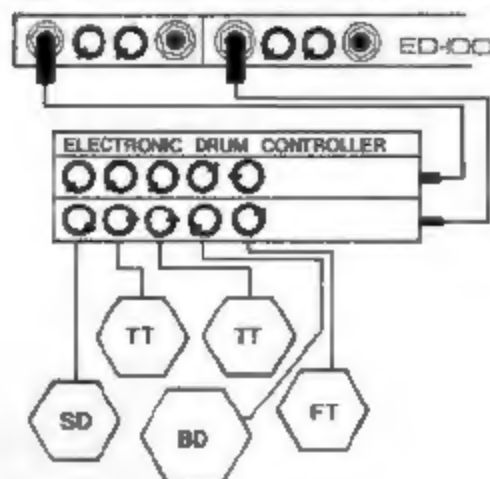
Although the ED-100 incorporates many sophisticated features, its operation is relatively simple. In order to quickly familiarize yourself with the ED-100, and to avoid potentially hazardous or damaging situations, please read this operating guide carefully and completely and keep it handy for future reference.

### BASIC SETUP AND CONNECTIONS:

The ED-100 features two channels which differ in input equalization. The normal channel is essentially "flat" (no input equalization) and is designed primarily for amplification of bass drum signals. The bright channel is equalized to enhance high frequency signals and is designed primarily to accept signals from the snare drum and tom-toms.

Most electronic drum system mixers provide two outputs for adjusting the mix of individual drum signals. To interconnect the drum mixer to the ED-100, use two high-quality shielded connecting cables. Connect one end of each cable to each of the mixer's outputs. Connect the other end of each cable to a channel input of the ED-100. Then adjust the drum system mixer to route individual drum signals to the appropriate channel of the ED-100.

Since individual drum system manufacturers differ in mixer configuration, a complete discussion of mixer adjustments is beyond the scope of this manual. Consult the owner's manual of your drum system for specific instructions regarding channel assignments. A basic mix for use with the ED-100 might look like this:



### FRONT PANEL FEATURES:

#### CHANNEL INPUTS (A,E)

As discussed in the Basic Setup Section, the Channel Inputs receive signals from the drum system mixer outputs. These inputs are high impedance and will accept signals over a wide dynamic range.

#### CHANNEL GAIN CONTROLS (B,F)

The Channel Gain Controls allow individual volume adjustments of each incoming signal. Adjusting the individual Channel Gain Controls will affect both the overall loudness of the ED-100's output and the balance between channels. Some experimentation will be necessary to determine the best overall balance between channels. Regardless of the type of electronic drum system used, setting of the Channel Gain controls above "5" (12 o'clock) is not recommended. Setting the Channel Gain controls above "5" may result in unwanted distortion and/or premature engaging of the DDT Compression Circuit (see the DDT Compression Section for further information).

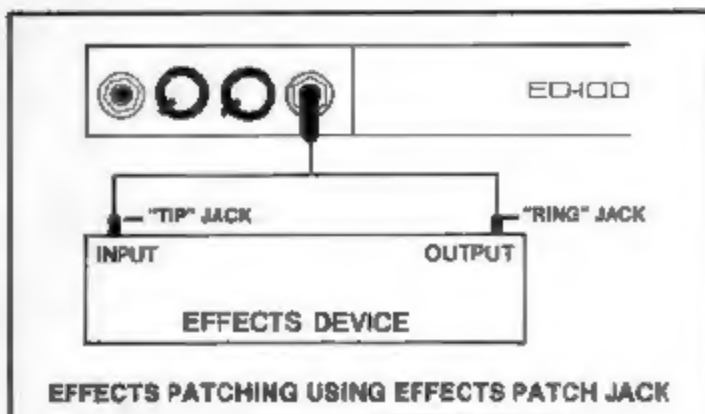
#### MONITOR CONTROLS (C,G)

Each channel is provided with a Monitor Control and monitor preamp. These controls are completely independent of the ED-100's internal signal flow; signal from these controls is routed directly to the monitor jacks on the rear panel (see the Monitor Jacks Section for further information).

#### EFFECTS PATCH JACKS (D,H)

Each channel is provided with a stereo-type Effects Patch Jack. These jacks are used with external devices to provide independent effects loop capability for each channel.

To patch an effects device into a channel, a stereo "Y" cord should be used. First, turn the Channel Gain Control to its "0" setting. Insert the stereo plug into the effects patch jack. Insert the "Tip" plug into the effects input jack. Insert the "Ring" plug into the effects output jack. Then slowly increase the Channel Gain Control setting until a satisfactory level has been achieved. Note that all signals in a channel (except monitor signals) will be sent through any effect patched into that channel. Also note that the Effects Patch Jacks occur in the signal path before the equalization stage (pre-EQ). Therefore, any effects signal will be altered by changes in the equalization controls (see the Equalization Controls Section for further information).



#### EQUALIZATION CONTROLS (I,J)

The ED-100 is equipped with four bands of equalization, each adjusted by one of the four Equalization Controls. These controls are "stacked" on the front panel. The inner knob on the left stack is the Low Frequency Control, while the outer knob is for Low Mid frequencies. In the right stack, the outer knob regulates High Mid frequencies, while the inner knob is the High Frequency Control.

The ED-100 features active equalization, which means that frequencies within any band may be either cut or boosted. Setting any Equalization Control to "0" delivers a "flat" (unaltered) frequency response for that band. Rotating an Equalization Control clockwise will boost frequencies within that band, while rotating counterclockwise will cut that band's frequencies. Extreme care should be taken when boosting low frequencies. Low frequencies consume a disproportionate amount of an amplifier's power, and overboosting low frequencies may lead to loss of headroom (amplification capability) and to possible speaker damage. Extreme boost of any Equalization Control should be avoided to ensure quiet operation.

#### MASTER GAIN CONTROL (K)

The Master Gain Control regulates the total amplification and headroom of the ED-100. In normal operation, the Master Gain Control should be set at or near "10" to allow maximum headroom and dynamic range and to prevent distortion.

## HEADPHONE JACK (L)

The Headphone Jack allows the use of any stereo headset with the ED-100. When a plug is inserted into the Headphone Jack, the amplifier's internal speaker automatically is disconnected, creating a totally private rehearsal environment. Note that the headphone system will not work with headsets equipped with a mono phone plug.

## DDT™ COMPRESSION CIRCUIT AND COMPRESSION LED (M)

The ED-100 utilizes Peavey's patented DDT (Distortion Detection Technique) Compression Circuit to virtually eliminate the possibility of clipping distortion in the power amplifier and speakers. The DDT Circuit performs its function automatically and is not adjustable. The DDT Circuit will not engage until the ED-100 is utilizing all available output power. When this occurs, the Compression LED will light. In normal playing, the ED-100 should be set so that the Compression LED lights only on very loud passages.

If the Compression LED remains constantly lit, this indicates that the Channel Gain and/or Master Gain Controls are set too

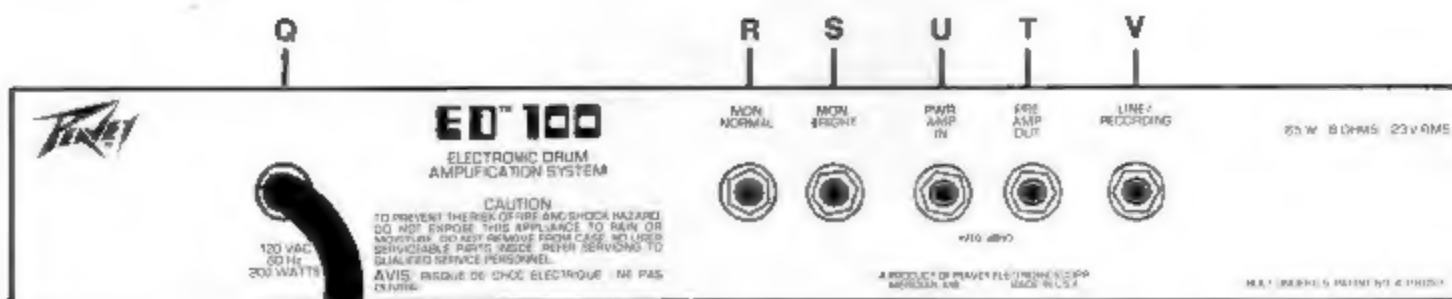
high, or that too much boost equalization is being used. In this situation, control settings should be reduced until the Compression LED fires only intermittently. The Compression LED will sometimes illuminate when the ED-100 is turned on. This is normal and does not indicate a malfunction of the amplifier.

## GROUND SWITCH (O)

The Ground Switch is a three-position rocker switch which should normally be operated in its center or "0" position. Occasionally, a situation may arise in which noticeable hum or noise comes from the ED-100's loudspeakers. If this should occur, switching the ground switch to either positive (+) or negative (-) should eliminate or minimize the noise. If hum or noise problems persist, consult your Authorized Peavey Dealer or a qualified service technician. NOTE: THE GROUND SWITCH IS NOT FUNCTIONAL ON 220/240 VOLT EXPORT MODELS.

## ON/OFF SWITCH AND POWER LED (P,N)

The On/Off Switch is a two-position rocker switch which provides AC power to the ED-100. When the switch is in the On position, the red Power LED will illuminate showing that power is being supplied to the unit.



## REAR PANEL FEATURES:

### LINE CORD (Q)

For your safety, the ED-100 is equipped with a three-wire line (mains) cord and a three-pin AC plug. It is not advisable to remove the ground pin under any circumstances. If it is necessary to use the ED-100 without proper grounding facilities (as when only two-wire AC service is available), a suitable grounding adaptor should be used. When the ED-100 is used with properly grounded AC receptacles, shock hazard is greatly reduced, as are hum and noise.

### MONITOR JACKS (R,S)

Two Monitor Jacks (one for each input channel) are provided. Signal to these jacks is controlled by the Monitor Controls (see the Monitor Controls Section) and is not affected by any Gain or Equalization Controls. Signals from these jacks may be used to feed monitor amplifiers, sound reinforcement systems, recording consoles or other equipment.

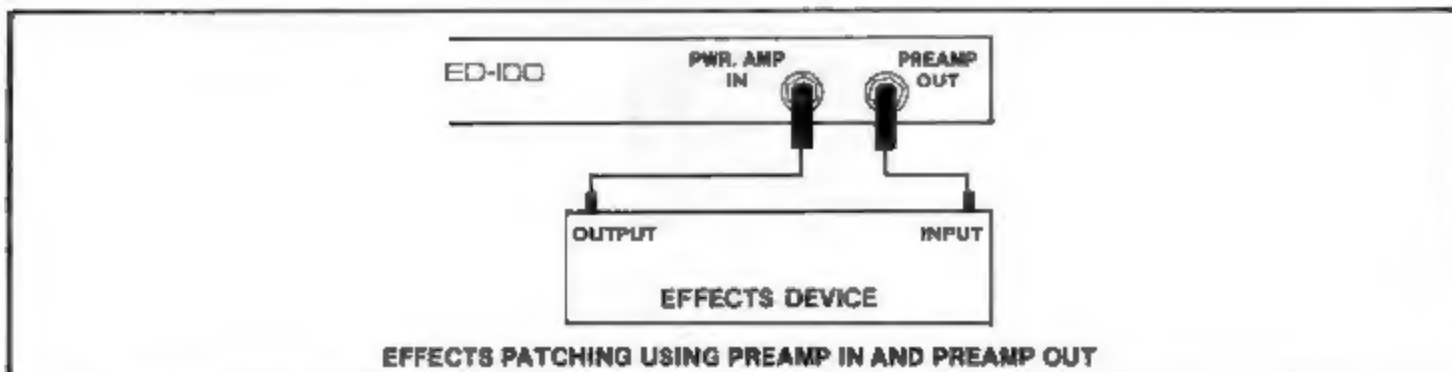
### PREAMP OUT AND POWER AMP IN JACKS (T,U)

The Preamp Out and Power Amp In Jacks provide another

form of effects patching within the ED-100. Effects may be patched between the preamp and power amp according to the following diagram. Be sure to use high-quality shielded cables when connecting any effects device with the ED-100. Connecting an effects device at the Preamp Out and Power Amp In Jacks differs in two ways from effects patching discussed earlier in the Effects Patch Section. First, any effect patched at this point will affect all signals in both channels within the amplifier (except monitor signals). Secondly, this effects patch point occurs after the ED-100's equalization stage (post-EQ). In experimenting with effects patching, you may note differences in the operation of an effects device depending on its location in the signal path.

### LINE/RECORDING JACK (V)

The Line/Recording Jack provides a means of sending a low impedance signal to the mixer, recording console or additional amplifier. Signals appearing at this jack are post-EQ and contain information received from both input channels.



## ED-100 SPECIFICATIONS

### SUMMARY OF FUNCTIONS:

Two channels in with Pre EQ Patch and four-band equalizer; preamp out; monitor (each channel); master level; 85 watt power amp with DDT™ compression; one heavy-duty 15" speaker and one GDH™ horn.

### PREAMPLIFIER SECTION:

The following preamp specs are measured with all EQ set flat (0 dB), master level set at 10. Nominal signal levels are with channel level controls set at 5. Minimum levels are with channel level controls set at 10.

### INSTRUMENT INPUTS:

Impedance: High Z, 100K ohms  
Nominal Input Level: -19 dBV, 110 mV RMS  
Minimum Input Level: -39 dBV, 11 mV RMS  
Maximum Input Level: +10 dBV, 3V RMS

### PRE EQ PATCH OUTPUT (STEREO JACK TIP):

Function: Low Level Effects Send  
Load Impedance: 10K ohms or greater  
Nominal Output: -8.5 dBV, .38V RMS

### PRE EQ PATCH INPUT (STEREO JACK RING):

Function: Low Level Effects Return  
Impedance: High Z, 100K ohms  
Designed Input Level: -8.5 dBV, .38V RMS  
(Switching stereo jack providing patch output to patch input connection when not used)

### PREAMP OUTPUT:

Function: High Level Post EQ Signal Send  
Load Impedance: 1K ohms or greater  
Nominal Output: 0 dBV, 1V RMS  
Maximum Output: +18 dBV, 8V RMS

### POWER AMP INPUT:

Function: High Level Post EQ Signal Return  
Impedance: High Z, 22K ohms  
Designed Input Level: 0 dBV, 1V RMS  
(Switching jack providing preamp output to power amp input connection when not used)

### LINE RECORDING OUTPUT:

Function: Additional preamp output  
Load Impedance: 1K ohms or greater  
Nominal Output: -0 dBV, 1V RMS

### THE FOLLOWING SPECS MEASURED AT NOMINAL SETTINGS: ALL CHANNEL INPUTS TERMINATED WITH 47K OHMS:

**FREQUENCY RESPONSE (Channel In/Preamp Out with 1V RMS output):**  
Equalized for ED-100 speaker

### TOTAL HUM & NOISE:

-90 dBV below rated output

### SYSTEM DISTORTION (Channel In/Preamp Out, 40 Hz - 20 kHz at 1V RMS):

Less than .05% THD, typically below .01%

### EQUALIZATION:

+/-15 dB at 60 Hz and 10 kHz (shelving)  
+/-15 dB at 400 Hz and 2 kHz (peak/notch)

### POWER AMPLIFIER SECTION:

#### RATED POWER AND LOAD:

85W RMS into 8 ohms with DDT™ Compression and LED Indicator

#### POWER AT CLIPPING (typically at 8% THD, 1 kHz, 120 VAC line):

70W RMS into 8 ohms

### FREQUENCY RESPONSE:

+0, -1 dB, 20 Hz to 20 kHz at 50W RMS into 8 ohms

### TOTAL HARMONIC DISTORTION:

Less than 0.2%, 100 mW to 50W RMS, 20 Hz to 10 kHz, typically below 0.1%

### DDT™ DYNAMIC RANGE:

Greater than 20 dB

### DDT™ MAXIMUM THD:

Less than 0.5% THD for 6 dB overload  
Less than 1% THD for 20 dB overload

### HUM & NOISE:

Greater than 95 dB below rated power

### POWER CONSUMPTION:

200W, 50/60 Hz, 120 VAC

### MONITOR CHANNELS SECTION:

#### MINIMUM INPUT LEVEL:

28.6 mV RMS, -31.5 dBV for 1V out

#### NOMINAL INPUT LEVEL:

.31V RMS, -10.3 dBV for 1V out

#### MAXIMUM INPUT LEVEL:

3.2V RMS, +10 dBV without clipping

#### INPUT IMPEDANCE (each channel):

100K ohms

#### INPUT IMPEDANCE (effects patch, either channel):

100K ohms

#### HEADPHONE OUTPUT:

Minimum Load Impedance: 4 ohms

#### OPEN CIRCUIT OUTPUT VOLTAGE:

20V minimum; 10V minimum with a 250 ohm load  
(use of the Headphone Jack mutes the loudspeakers)

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**CAUTION**

EXPOSURE TO EXTREMELY HIGH NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS. INDIVIDUALS VARY CONSIDERABLY IN SUSCEPTIBILITY TO NOISE INDUCED HEARING LOSS, BUT NEARLY EVERYONE WILL LOSE SOME HEARING IF EXPOSED TO SUFFICIENTLY INTENSE NOISE FOR A SUFFICIENT TIME.

THE U.S. GOVERNMENT'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAS SPECIFIED THE FOLLOWING PERMISSIBLE NOISE LEVEL EXPOSURES:

DURATION PER DAY IN HOURS	SOUND LEVEL (dBA, SLUR RESPONSE)
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4	115

1/4 of 1988

ACCORDING TO OSHA, ANY EXPOSURE IN EXCESS OF THE ABOVE PERMISSIBLE NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS. EXPOSURE TO NOISE IN EXCESS OF THE ABOVE PERMISSIBLE NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS. EXPOSURE TO NOISE IN EXCESS OF THE ABOVE PERMISSIBLE NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS.

THIS AMPLIFIER HAS BEEN DESIGNED AND CONSTRUCTED TO PROVIDE ADEQUATE POWER RESERVE FOR PLAYING MODERN MUSIC WHICH MAY REQUIRE OCCASIONAL PEAK POWER TO HANDLE OCCASIONAL PEAK POWER. "HEARING LOSS" HAS BEEN ASSIGNED INTO THIS SYSTEM. IT IS YOUR RESPONSIBILITY TO AVOID EXPOSURE TO EXCESSIVE NOISE LEVELS. PLEASE BE AWARE THAT MAXIMUM POWER CAN BE OBTAINED WITH VOLUME SETTINGS OF THE GAIN CONTROL AT THE INPUT SIGNAL SOURCE.

**CAUTION:**

1. Read all safety and operating instructions before using this product.

2. All safety and operating instructions should be retained for future reference.

3. Obey all cautions in the operating instructions and on the back of the unit.

4. All operating instructions should be followed.

5. This product should not be used near water, i.e. a bathtub, sink, swimming pool, wet basement, etc.

6. This product should be located so that its position does not interfere with air proper ventilation. It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.

7. This product should not be placed near a source of heat such as a stove, heater, radiator or another heat producing appliance.

8. Connect the power supply cord to the power supply cord.

9. Never break off the ground pin on the power supply cord. For more information on grounding, write for our free booklet "Shock Hazard and Grounding".

10. Power supply cords should always be handled carefully. Never walk or place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the cord exits the unit.

11. The power supply cord should be unplugged when the unit is to be unused for long periods of time.

12. Metal parts can be cleaned with a damp rag. The vinyl covering used on some units can be cleaned with a damp rag or an ammonia based household cleaner if necessary.

13. Care should be taken so the contents do not fall or accident into the unit through the ventilation holes or any other openings.

14. This unit should be checked by a qualified service technician if:

- The power supply cord or plug has been damaged.
- Anything has fallen or been spilled into the unit.
- The unit does not operate correctly.
- The unit has been dropped or the enclosure damaged.

15. The user should not attempt to service this equipment. All service work should be done by a qualified service technician.



Due to our efforts for constant improvement, features and specifications listed herein are subject to change without notice.

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